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GLAZE DEFECTS AND ADJUSTMENTS

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The Potter's Complete Book Of Clay And Glazes
by James Chappell

DESCRIPTION	CAUSE	ADJUSTMENT
BLISTERING Blistering or bubbling apparent in the glaze or on the surface of the glaze.	1. Gases escaping from the body during glaze firing. 2. Gases escaping from the glaze during firing. 3. Raw alkaline glazes which have sat on the shelf in solution until disassociation has taken place.	1. Fire the bisque a cone or two higher to make the body less porous. 2. Dampen the bisque ware. Fire the kiln more slowly and allow for a soaking period of half an hour at the maturing point to allow the broken bubbles to heal over after the gases have escaped. 3. Grind raw alkaline glazes thoroughly and use them the same day or grind them dry and mix up only the amount needed.
COLOR LOSS Faded glaze color.	1. Overfiring to the point that disassociation of the coloring oxide takes place.	1. Watch the kiln temperature more carefully to prevent overfiring.
CRAZING Cracks formed in the glaze in irregular patterns.	1. Differences in the rate of expansion or contraction of the clay body and the glaze, i.e., the glaze shrinks more than the body of the ware. 2. The glaze coating is too thick. 3. Moisture intake in the pottery after firing - this is known as delayed crazing.	1. Increase the silica content of the clay body by 5% and test the glaze for crazing. 2. Apply the glaze in thinner coats. 3. Use higher fired bisque to retard latent moisture intake.
CRAWLING Drawing of the glaze into clumps leaving bare areas on the ware.	1. Glazing the ware too thickly. 2. Overfiring the glaze. 3. Firing the kiln too rapidly 4. Clay content of the glaze is too high. 5. Drying the glaze after application too quickly. 6. Lack of adhesiveness and tensile strength in the glaze. 7. Too high tensile strength in the glaze. 8. Flocculation in storage due to soluble alkalies in the glaze. 9. Greasy or dirty bisque. 10. Overloading the glaze with opacifiers or with feldspar.	1. Use a thinner glaze coat. 2. Fire the glaze one or two cones lower. 3. Fire the kiln more slowly. 4. Decrease the clay content of the glaze recipe by 2% to 3% and test for signs of crawling. 5. Allow the glaze application to dry normally. 6. Use a gum adhesive such as C.M.C. in amounts of one teaspoon per pint/half-litre of glaze. 7. Decrease the gum adhesive content by half. 8. Use glazes with soluble alkalies soon after preparation, or grind and store them dry and mix only the amount needed. 9. Protect bisque ware from contamination by foreign materials before glazing. 10. Decrease the amount of opacifiers or feldspar in the glaze.

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CRAWLING, con't.	11. Underfiring.	11. Check for other signs of underfiring on the piece and determine if a higher firing is needed.
	12. Too smooth a body surface, such as burnished ware.	12. Do not finish pottery to a very smooth surface if it is to be glazed.
	13. Double glazing where the first glaze is too dry.	13. Apply second glaze while the first glaze is still slightly moist.
	14. Using water with a very high mineral content.	14. Use water with a lower mineral content.
DEVITRIFICATION Areas on the glaze surface which have a frosted crystal-like appearance.	1. Too slow cooling of the kiln.	1. Cool the kiln more quickly after the maturing point of the glaze is reached or after the soaking period, if one is employed.
	2. Too much free silica in the glaze.	2. Reduce the amount of free silica content by 5%.
	3. Too high clay content in the glaze recipe.	3. Reduce the clay content by 5%.
EXCESSIVE GLOSS Excessively high shine on the glaze surface.	1. Overfiring.	1. Fire one cone lower.
	2. Rapid firing and cooling of the kiln.	2. Slow down the firing process.
	3. Excess flux in the glaze recipe.	3. Decrease the fluxing agent by 5% or add kaolin in amounts of 2% to 5%.
	4. Excess silica in the glaze recipe.	4. Decrease the silica content in the glaze formula or add kaolin in 2% to 5% amounts.
GLAZE RUNNING Glaze runs down piece, pooling at the base and thinning at top.	1.Overfiring.	1. Watch the kiln more carefully to prevent overfiring.
	2. Insufficient kaolin content in the glaze to stabilize it.	2. Increase the kaolin content of the glaze by 2% to 5%.
OVERFIRING Opaque glazes going translucent, excessuve gloss, color loss, or thinning	1. Overfiring.	1. First check to see if the cone level has been exceeded. If this is not the case, the glaze may actually have a lower maturing point than indicated. Try firing one cone lower or two cones lower.
PINHOLING Small pinholes in the surface of the glaze.	1. Air escaping from a porous underfired bisque ware.	1. Fire the bisque one cone higher and dampen the ware before glazing.
	2. Excessive grinding of the glaze.	2. Grind the glaze for shorter periods of time.
	3. Gases escaping from the glaze.	3. Allow for a soaking period of half an hour at the maturing point of the glaze to let these gas holes heal over.
	4. Glazes which are too viscous.	4. Increase the flux or decrease the clay content by 2% to 5%.
ROUGH SURFACE Rough, sandy, or grainy surface on the glaze.	1. Glazing too thin.	1. Apply the glaze more thickly.
	2. Underfiring.	2. Fire the glaze ware one or two cones higher.
	3. Insufficient flux in the glaze to melt the silica.	3. Increase the fluxing agent by 2% to 5%.
SCUMMING A frosty scumlike deposit on the surface of the glaze.	1. Soluble salts in the glaze.	1. Add 2% barium carbonate or a teaspoon of vinegar per pint/half-litre to the glaze mix.
	2. Sulfur fumes from the fuel where oil or solid fuel is used.	2. Use saggers to protect the pots or try another fuel with a lower sulfur content.
SHIVERING Glaze breaking away.	1. Takes place when the clay shrinks more than the glaze, causing a buckling of the glaze.	1. Decrease the silica content of the glaze 5% to 10%.
SPECKLING Surface marred by specks.	1. Foreign material getting into the glaze mix.	1. Protect glaze containers to prevent contamination by foreign materials.
	2. Dust or foreign matter falling on the glazed or bisque ware during the drying process.	2. Protect ware during drying stages of both bisque and glazing to prevent foreign matter from settling on them.
UNDERFIRING Underfired glazes will usually be opaque with rough gritty surfaces and immature colors as compared to the finished mature glaze.	1. Not firing the glaze to its proper maturing point.	1. Fire the glaze one cone higher and check for signs of underfiring - if they are still present, fire the glaze still higher by stages until the proper maturing point of the glaze is determined.